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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,323	07/28/2003	Niels Johannes Beck	1125.131	4443

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EXAMINER	
TRIEU, THAI BA	
ART UNIT	PAPER NUMBER

3748

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 10/628,323	Applicant(s) BECK ET AL.	
	Examiner Thai-Ba Trieu	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) ☒ Claim(s) 1-28,31,33 and 35-38 is/are allowed.
 6) ☒ Claim(s) 29,30,32,34 and 39 is/are rejected.
 7) ☒ Claim(s) 40 is/are objected to.
 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☒ The drawing(s) filed on 02 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the Amendment filed on February 15, 2005. Applicant's cooperation in correcting the informalities in the drawing and specification is appreciated. Claims 16, 21, 29, 31, 33, 35, and 38 were amended; and claims 39-41 were added.

Applicant's arguments, see Pages 14-20, filed February 15, 2005, with respect to the rejection(s) of claim(s) **29-30, 32 and 34** under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is set forth below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 29-30 and 39 are rejected under 35 U.S.C. 102(b) as being anticipated by Webster et al. (Patent Number 4,358,414).

Webster discloses a method comprising:

injecting a liquid fuel (via 12) into an air stream (10) to form a homogeneous mixture of air (See Figure 1, Abstract, Column 2, lines 10-21);

admitting said mixture into a combustion chamber of an internal combustion engine (See Column 1, lines 19-44, and Column 3, lines 34-35);

wherein the injecting step is formed on a full range of engine operation speeds and engine loads (See Column 1, lines 14-18);

igniting the liquid fuel in said mixture by compression ignition so as to achieve homogeneous charge compression ignition (HCCI) of said liquid fuel a diameter less than about 50 microns and between about 5 microns and about 20 microns (See Figure 1, Column 1, lines 45-60, Column 2, lines 47-53, Column 3, lines 27-32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Webster et al. (Patent Number 4,358,414), in view of Talbert (Patent Number 4,429,675).

Webster discloses the invention as recited above; however, Webster fails to disclose said liquid fuel being injected via at least one fogging nozzle and having an impaction device.

Talbert teaches that it is conventional in the fuel system of the internal combustion engine art, to utilize a fogging nozzle (via 99) to inject said liquid fuel and

Art Unit: 3748

an impaction device to atomize fuel droplets(See Figure 1, Column 4, lines 59-68, and Column 5, lines 1-3).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized the fogging nozzle and an impaction device, as taught by Talbert, to provide fine fuel droplets and improve the efficiency of the modified Webster device.

Allowable Subject Matter

Claims **1-28, 31, 33, and 35-38** are allowed.

Claim **40** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims **1-40** have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

Art Unit: 3748

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
March 18, 2005



Thai-Ba Trieu
Primary Examiner
Art Unit 3748